

CrystalFree[™] Oscillator Ultra Low Power Oscillators

PRELIMINARY DATA SHEET

3CP02

Features

- Frequency Range:
- Output Type: CMOS
- Frequency Tolerance:
- Supply Voltage:
- Power Consumption:
- Standby Current:
- Standard Package:
- Operating Temperature:
- 5.0 x 3.2 mm 0 to 70 °C -20 to 70 °C

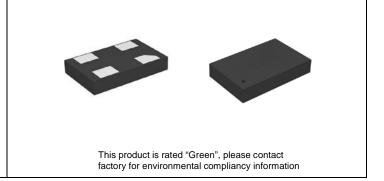
4 to 133 MHz

± 100 ppm

1.8 to 3.3 V

< 1 uA

1.9 mA (1.8 V)



Specification

Parameter	Symbol	Specifications			Conditions
Supply Voltage	VDD	1.8 V	2.5 V	3.3 V	Nominal
Output Frequency	Fout	4 to 133 MHz			See ordering code
Frequency Stability	F _{STB}	± 100 ppm			Total Frequency Stability*
Supply Current	IDD	1.9 mA	2.0 mA	2.2 mA	Typical; No load condition; 25°C
Quiescent Current	I _{STBY}	1 uA			STBY# = GND
Input LOW level	VIL	0.3 VDD (max)			At STBY# pin
Input HIGH level	VIH	0.7 VDD (min)			
Output LOW level	Vol	0.1 VDD (max)			I _{oL} = - 1mA
Output HIGH level	V _{он}	0.9 VDD (min)			I _{OH} = 1mA
Rise/Fall Time	T_R/T_F	2.75ns	2.3ns	1.9ns	20% to 80% x VDD. Output load (CL) = 4pF
Symmetry	SYM	45% / 55%			For frequencies < 100MHz;
		40% / 60%			For frequencies > 100MHz;
Start-up time	T _{ST}	100 us			Output valid time after VDD meets the specified range & STBY# transition
Period Jitter	PJ _{RMS}	17 ps	6 ps	5 ps	4pF load; 75MHz
Cycle to Cycle Jitter	CCJ _{MAX}	120 ps	50 ps	40 ps	4pF load; 75MHz

* Stability over temperature, supply variation, 3x reflow, load variation, aging (10 years)

Package Outline and Dimensions

Typical PCB Land Pattern Pin #1 ID 3.20 ±0.05 - 0.90 ± 0.05 0.85 ±0.05 Chamfer 0.5 x 45° 0.0-0.05 1.20 ± 0.05 STBY# VDD 5.0 x 3.2 4L SMD (mm) 5.00 ± 0.05 2.54 N.U 5.0 x 3.2mm OUT GND 6 0.203 Ref. ←1.4→ **Top View Bottom View** Side View

Absolute Maximum Ratings

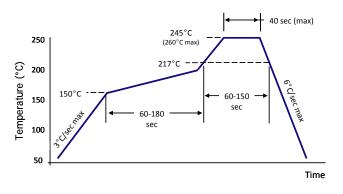
Stresses beyond those listed under *Absolute Maximum Ratings* may cause permanent damage to the device. These ratings are stress specifications only. Functional operation of product at these or under any condition beyond those listed in the operating specifications is not implied. Exposure to absolute maximum rated conditions may affect product reliability.

Item	Maximum Absolute Rating
VDD	4.6V
STBY#	-0.5V to VDD + 0.5V
OUT	-0.5V to VDD + 0.5V
Storage Temperature	-65°C to 150°C

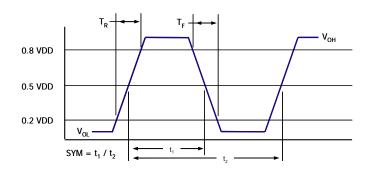
Pin Descriptions

Pin #	Name	Description			
1	STBY#	Standby Mode ¹ (0 = Output Disabled)			
2	GND	Ground			
3	OUT ²	CMOS Output			
4	VDD	Power			
 Pulled high internally Weak pull down to GND during STBY# enable and startup 					

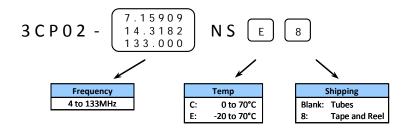
Solder Reflow Profile



Output Wave Form



Ordering Information



Sales

6024 Silver Creek Valley Road San Jose, California 95138 800-345-7015 (inside USA) +1 408-284-8200 (outside USA) Fax: 408-284-2775

Technical Support

crystalfreetechsupport@idt.com +408-739-5400

DISCLAIMER Integrated Device Technology, Inc. (IDT) and its subsidiaries reserve the right to modify the products and/or specifications described herein at any time and at IDT's sole discretion. All information in this document, including descriptions of product features and performance, is subject to change without notice. Performance specifications and the operating parameters of the described products are determined in the independent state and are not guaranteed to perform the same way when installed in customer products. The information contained herein is provided without representation or warranty of any kind, whether express or implied, including, but not limited to, the suitability of IDT's products for any particular purpose, an implied warranty of merchantability, or non-infringement of the intellectual property rights of others. This document is presented only as a guide and does not convey any license under intellectual property rights of IDT or any third parties.

IDT's products are not intended for use in life support systems or similar devices where the failure or malfunction of an IDT product can be reasonably expected to significantly affect the health or safety of users. Anyone using an IDT product in such a manner does so at their own risk, absent an express, written agreement by IDT.

Integrated Device Technology, IDT and the IDT logo are registered trademarks of IDT. Other trademarks and service marks used herein, including protected names, logos and designs, are the property of IDT or their respective third party owners.

Copyright 2010, 2011. All rights reserved.